

What is Claimed is:

1 1. A multiple force tool for applying pressure to  
2 circuit board components comprising:

3 first, second and third support channels for  
4 supporting first, second and third horizontally extending  
5 arms over a circuit board having multiple components;

6 a plurality of pressure cylinders supported by  
7 said horizontally extending arms over each of said  
8 components; and

9 means connected to said pressure cylinders for  
10 extending a pressure foot of said cylinders to a position for  
11 applying a force against said components.

1 2. The multiple force tool according to claim 1  
2 wherein said horizontally extending arms are positionable  
3 along said channels to vary the location of said pressure  
4 cylinders along a first axis.

1 3. The multiple force tool according to claim 1  
2 wherein said horizontally extending arms include means for  
3 positioning said pressure <sup>cylinders</sup> ~~transducers~~ along a second axis.

1 4. The multiple force tool according to claim 2  
2 wherein said channels include position indicia for  
3 establishing a position coordinate for said pressure  
4 cylinders along said first axis.

1 5. A multiple force tool for establishing a pressure  
2 on circuit board components during manufacture of a circuit  
3 board bearing said components comprising:

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4 first, second, and third channels for supporting a  
5 plurality of horizontal arms, said channels being located  
6 about the periphery of a surface which supports said circuit  
7 board;

8 a plurality of horizontal arms supported in said  
9 channels which extend over said circuit board;

10 a plurality of compressed air pressure cylinders  
11 supported on said horizontal arms, having a pressure foot  
12 which is extendable in response to compressed air to apply a  
13 force on a component of said circuit board located beneath  
14 said pressure foot; and

15 a source of compressed air connected to said  
16 compressed air pressure cylinders, operable in response to a  
17 foot valve for extending said pressure feet against said  
18 circuit components.

1 6. The multiple force tool according to claim 5  
2 wherein said source of compressed air supplies a pulse of air  
3 pressure having a preset duration and magnitude.

1 7. The multiple force tool according to claim 5  
2 wherein said compressed air is supplied through a flow  
3 control valve to said compressed air pressure cylinders for  
4 regulating the speed of extension of said pressure foot.

1 8. The multiple force tool according to claim 5  
2 wherein said source of compressed air comprises:

3 a timer means which operates in response to a  
4 closure of said foot valve to produce a timed pulse of  
5 compressed air to said compressed air cylinders whereby said  
6 pressure feet are extended for a period of time controlled by

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air cylinders

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